

Notice of Allowability

Application No.

10/696,276

Applicant(s)

COBB, NICOLAS B.

Examiner

Juan C. Ochoa

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/2/07.
2. ☒ The allowed claim(s) is/are 1-3,5,8,12.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 20070819
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

layout data file to a remote computer system that processes the data file by: reading at least a portion of the transmitted file defining one or more features to be created; fragmenting the feature into a number of edge fragments; defining initial simulation sites for one or more of the edge fragments; estimating an image intensity at the initial simulation sites; and adjusting one or more of the initial simulation sites based on the estimated image intensity (see claim 11),

none of these references taken either alone or in combination with the prior art of record disclose polygon fragmentation specifically including:

claim 1, "fragmenting a polygon into a number of edge segments by defining a number of fragmentation endpoints that extend around the perimeter of the polygon",

and claim 8, "fragmentation of the polygon to add fragmentation endpoints on the perimeter of the polygon",

which Examiner interprets as "a technique for preparing a layout file for the application of OPC by adjusting the number of fragmentation points on a perimeter of a polygon defining features to be created in accordance with calculated image curvature. In the embodiment shown in FIGURES 10A - 10E and described on pages 15 line 31–page 16, line 9 of the present application, a feature to be created on a wafer is defined as a polygon. The polygon is fragmented with an initial fragmentation pattern and image curvature is calculated at simulation sites around the perimeter of the polygon. Based on the curvature values calculated, fragmentation points may be added or removed on the perimeter of the polygon" (see Applicant's arguments filed 8/2/07, page 7, 2nd paragraph, lines 1–9) and "FIG. 10A shows a polygon 950 whereby dense fragmentation is initially

applied throughout the layout in preparation for doing OPC (FIG. 10B). Control sites 952 and cut lines 954 are generated for each segment, and the simulated aerial image for the layout is computed. Using a suitable sampling plan, the light intensity curvature for each edge segment is computed (FIG. 10C). For contiguous edge segments in which the light intensity curvature is lower than the preset threshold, the endpoints between them can be eliminated, and new single edge segments 952A, 952B, 952C generated in place of the contiguous edge segments, as shown in FIG. 10D. New control sites 954A, 954B, 954C are then determined for the new edge segments as shown in FIG. 10E. OPC then continues as normal on the polygon with the revised fragmentation" (see claimed invention's page 15 line 31–page 16, line 9),

in combination with the remaining elements and features of the claimed invention. Also, there is no motivation to combine these references to meet these limitations. It is for these reasons that applicant's invention defines over the prior art of record.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

7. Applicant's arguments filed 8/2/07 have been fully considered, and they are persuasive.

8. Regarding the IDS objections, Applicant's arguments have been considered and the objections are withdrawn.

9. Regarding the drawing objections, the amendment corrected all deficiencies and the objections are withdrawn.

10. Regarding the rejections under 103, Applicant's arguments have been considered and the rejections are withdrawn.

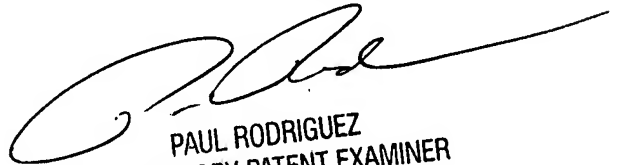
Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan C. Ochoa whose telephone number is (571) 272-2625. The examiner can normally be reached on 7:30AM - 4:00 PM.

12. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on (571) 272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JP 8/23/07


PAUL RODRIGUEZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100